

225 Oxford Drive  
Cotuit, MA 02635  
February 7, 2006

Department of the Interior  
Minerals Management Service  
Attention: Rules Processing Team (RPT)  
381 Elden Street, MS-4024  
Herndon, Virginia 20170-4817

Re: Alternative Energy-Related Uses on the Outer Continental Shelf RIN 1010—AD30

I have been studying the issues involved with offshore wind power for more than four years. As part of this work I attended many Army COE hearings on the Cape Wind project and provided many comment letters. From the beginning, I urged that a thorough study and careful decision be made on which areas of the ocean are acceptable to our nation for wind farms. The European experience would provide an excellent background for this work.

My comments on this important MMS program follow. Some comments refer to wind farms but also apply to other alternative energy projects.

Program Area: Access to OCS Lands and Resources

Issues(E) and Questions(3,8,9,11) refer to identifying areas for alternative energy projects. Existing uses, competing future uses and "a fair return" are mentioned.

-- **FISHERIES** I feel that there should be no tradeoffs or fair return arguments when it comes to ocean fisheries. These areas are critical as a food supply for our nation and to our economy for major exports. European nations have made it a policy to avoid construction in ocean fisheries. The U.S. should also prohibit development in and around existing and prospective ocean fishing areas.

[Wind farm proponents state that there is no proof that wind farms have disrupted European fishing. The reason is that Europeans have avoided construction in significant fishing areas.]

-- **PUBLIC SAFETY** Public safety is another issue that should not be compromised by alternative energy development. Wind farms should not be built within 1 mile of passenger ferry or shipping lanes. European countries generally abide by such a rule. The Long Island Power project uses a minimum ½ mile criteria.

[The proposed Nantucket Sound wind farm would locate some wind turbine generators adjacent to a passenger ferry and shipping lane. Last winter a Nantucket passenger ferry drifted helplessly for about 2 hours in a region near the proposed wind farm. Such situations could be disastrous to ferries and passengers.]

The safety of low-flying aircraft in the vicinity of wind farms is important. Wind farms should not be built on major routes of such airplanes.

[The proposed Nantucket Sound wind farm is on the flight path of commuter airplanes from Hyannis to Nantucket. Recently there have been several small aircraft that have left Hyannis and completely lost power. They drifted helplessly until they went into the ocean. Losing airplane power over a wind farm would be a disaster.]

Program Area: Environmental information, management, and compliance

Issues(K,L) and Questions(12-17)

Full details are beyond the scope of this comment letter. The DEIS for the Cape Wind project should be referred to as an example of the environmental issues that must be considered for offshore alternative energy projects and the types of analyses that must be performed.

-- **BIRDS** Wind farms and other developments that impact avian life should not be built in active bird communities or on migratory paths. Europeans have been very considerate of these issues, and I do not believe that the European coast has bird migrations that compare in size and diversity to those on the U.S. and Canadian coastlines.

-- **HUMAN FACTORS**

- Noise – What noise will be generated by the equipment (in new condition and in degraded condition) and by fog horns? What noise will be heard on land and by boaters under various wind conditions? What impact will the noise and equipment vibration have on marine life?
- Lights – What light levels will be generated by the equipment lights under various conditions of cloud cover and fog density. What light will be seen on land and by boaters at different locations inside and outside the project? What impact will the light have on the night sky and on star visibility? What impact will the lights have on marine life?
- The visibility of the project from shore needs to be addressed with pictures and/or simulations based on viewing with the human eye.
- What are the potential dangers of boating near the equipment? How will wind turbine blade breakage and flinging of ice and dead birds through the air be avoided? In Europe the public has been warned to stay out of some wind farms due to safety considerations.

-- **POLLUTION**

- What are the risks of ocean contamination by oil, grease or other contaminants during construction, operation and decommissioning of the project? The risk analysis should include the risks of transporting the equipment to the project site.
- What equipment failures would cause contamination of the ocean by oil, grease or other contaminants?"
- Equipment certification should be required to insure that installed equipment has a minimum risk to the environment (as discussed under Operational Activities).

-- **TRENCHES**

- Trenches must be given thorough study as to the impact (present and future) on shellfish and other marine life. The impact on commercial and recreational shellfishing activities must be determined. All impacts should be minimized.

Program Area: Operational Activities

Issues(P,Q,R,S,T,U) and Questions(18-21)

-- **CERTIFICATION** It is essential that any equipment installed in the ocean be designed, manufactured, installed and maintained to insure that people and the environment are protected. Many European countries have adopted very thorough certification requirements for wind turbine generators. A certificate must be issued by a government agency or wind turbine certifying institute, e.g. CIWI – Holland, Germanischer Lloyd - Germany. The requirements involve design verification, acceptable manufacturer's quality control, and system testing. System testing frequently involves measurements on the actual WTG to confirm design calculations (re: Vibration, static and fatigue strengths, etc.). Installation and maintenance standards have also been adopted and are requirements for offshore projects.

I am not aware of U.S. certification standards for offshore WTGs or other alternative energy equipment. I am also not aware of U.S. government-approved certification agencies. A certification standard for equipment to be installed in offshore U.S. waters should be established, and an approved agency should be available to certify proposed equipment. Included should be a requirement for lengthy testing of the actual equipment proposed. Accelerated life tests and failure analyses should be performed to identify what types of failures could be expected. Standards should also be adopted for installation and maintenance.

-- **CABLING and TRENCHING** There have been numerous problems with the installation of undersea cables. Recently the Long Island Cross Sound cable experienced installation problems, and final approval was held up due to the fact that the trench was not at the required 6 foot depth in portions of New Haven harbor. Installation of all cables needs to be closely inspected by government agencies during trenching to assure that all depth requirements are met.

There were also problems with another Army COE project involving ocean trenching. It has been found that an undersea gas line in Massachusetts Bay was improperly installed and needs repairs in eight locations because of the potential damage due to ships' anchors<sup>1</sup>. Open trenches and piles of spoils 200 to 1,000 feet long were discovered. The line was improperly buried in 21 places, but repairs at 13 locations were forgone due to the risk of further damage to marine life.

It seems that improper undersea trenching is endemic to Army COE projects. Permitting and authorizing agencies should take steps to insure that undersea cables are properly installed, with a minimum of damage to marine life. Final permit for a project should include approval of a plan which includes:

- Details of the procedure and equipment for trenching and laying the cables,
- Details of the method to be used to verify that the work is accomplished properly (proper cable depth, spoil handling, shellfish monitoring and spoil cleanup),
- Details of how government officials can monitor the installation and verification,
- Details of how government officials can halt installation if improper work is in process,
- Details on how and when the contractor will repair, correct and remedy improper work,

---

<sup>1</sup> Cape Cod Times "Corps Orders Repairs To Underwater Gas Pipeline" Dec 2, 2004

- Appropriate penalties for deviations to the plan.

-- **SITE SAFETY** The Service Platforms(SP) required by offshore alternative energy projects create a multiplicity of problems.

- People may be working/living on the Service Platform 24 hours a day, year round.
- Large quantities of fuel may be stored on the SP. It may also house transformers and other electrical equipment carrying hundreds of megawatts of electrical power. Explosions and fires in such wind farm equipment have been documented.
- The USCG may be expected to provide for the safety of the people on the SP and working on the wind turbines.
- The USCG may be expected to fight explosions and fires on the SP or on the wind turbines.
- The water depth at all equipment must allow vessel access for fire fighting and other rescue purposes.
- Would the USCG need additional vessels or equipment if a project is approved?
- Would the USCG need a new facility near the project?
- USCG personnel may require special training to support a project.
- How is the project going to be protected from Homeland Security attacks, considering the vulnerability of ocean locations?

These issues must all be addressed for every offshore alternative energy project.

Program Area: Payments and Revenues  
Issues(FF) and Questions(29)

-- **INSURANCE POLICIES AND SURETY BONDS** Appropriate insurance policies and surety bonds should be required on all projects. These should reimburse the government for any costs incurred in supporting the project. They should also be written to insure removal of equipment and cabling (if deemed necessary) during the construction phase, operational phase or end-of-life. The MMS should be the body that determines the need for removal and the procedures involved.

The financial viability of the insuring and bonding companies must be appropriate to the project, considering that some projects may involve more the one billion dollars of investment. Continual monitoring of the policies and bonds is needed because the end-of-life removal may be in excess of 20 years from project start.

European experience has shown that the availability of such sureties may depend on proper equipment certification (as discussed under Operational Activities).

Program Area: Coordination and Consultation  
Questions(32,33,34)

I believe that States with waters adjacent to an OCS project should be consulted as to the impact on State waters, especially in the site evaluation stage. State agencies will have maximum knowledge of the area and the sensitive issues. States should be allowed to veto uses of OCS waters which have been shown to have negative environmental, economic or public safety impacts on adjacent State waters.

Such procedures should be codified in the regulations in detail.

I hope that the Minerals Management Service will seriously consider all of these comments as our country moves forward with the important development of alternative energy.

Kenneth H. Molloy, P.E.